

宇宙ステーションからの撮影画像を用いた中間圏大気光メソスケールパッチ構造の研究

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Imaging observation of mesoscale patch structure in the mesosphere airglow from the ISS

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Whole image of mesoscale patch-like structure in the mesosphere airglow was captured by imaging observation from the International Space Station (ISS). Limb imaging observations with a digital single reflex camera, Nikon D3s, provide us mesosphere airglow images with very wide field of view (3,000 km width at the tangential point). An enhancement of OI airglow (557.7 nm) accompanies with depletion of Na airglow (589 nm) in the same region of 1,000 km x 2,000 km. In the region, the peak of Na airglow layer is higher than the surrounding about 3 km. This is the first entire image of the mesospheric mesoscale patch structure in OI and Na airglow. This scale size is in the gap of the previous airglow observations between small scale (10 - 400 km) observed by ground based airglow imagers and large scale (several 1,000s km) observed by satellite limb scanning. The mesoscale structure in mesosphere airglow was found, is larger than small scale gravity wave structures but it is smaller than whole the earth convective structures. In the presentation, the cause of this structure will be discussed.